



**UNIVERSITI PUTRA MALAYSIA**

**A THREE-GAP ANALYSIS OF MALAYSIAN ECONOMY**

**MARWAN ABDUL MALIK THANOON**

**FEP 2000 1**

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**DOCTOR OF PHILOSOPHY  
UNIVERSITI PUTRA MALAYSIA**

**2000**



**A THREE-GAP ANALYSIS OF MALAYSIAN ECONOMY**

**By**

**MARWAN ABDUL MALIK THANOON**

**Thesis Submitted in Fulfilment of the Requirements for the Degree of  
Doctor of Philosophy in the Faculty of Economics and Management  
Universiti Putra Malaysia**

**August 2000**



*To My Family, Mother, Brothers and Sister. ....*

*Especially to My Wife Noha and Our Babies. ...*

*With*

*Love, Respect and Gratitude*

*Marwan*

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of requirements for the degree of Doctor of Philosophy.

**A THREE-GAP ANALYSIS OF MALASIAN ECONOMY**

**By**

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**August 2000**

**Chairman: Professor Abdul Aziz Abdul Rahman, Ph.D.**

**Faculty: Economics and Management**

Malaysia, setting out to transform its economy through industrialisation to become a fully developed country by 2020 must provide for all of the resources required as best as it can. The key question pertaining to economic growth goal in Malaysia is the present and future configuration of the resource gap constraints which can be influenced by factors such as reliability of foreign capital inflow, strength of crowding in and crowding out effects, and the imperatives of the constraints on the process of economic development.

This thesis attempts to elucidate the above mentioned structural questions, to identify their solutions as well as to examine the extent of macroeconomic constraints faced by Malaysia as it undertakes economic transformation. Two as well as three-gap approaches have been utilised to identify the dominant resource constraints limiting the target growth and to estimate the future resource requirements needed to achieve the pre-determined target. Particular attention is given to the impact of foreign transfers on

the rate of growth in potential output. In addition, the study will examine the saving behaviour of the Malaysian economy. This will be done using the multivariate co-integration approach followed by an error-correction modelling to investigate the saving behaviour in a dynamic framework.

The empirical findings of the saving analyses indicate that maintaining a stable macroeconomic condition is critical for mobilising savings, encouraging domestic investment and laying the foundations for sustained economic growth. Among the macro variables exports and tax level appear to be more significant in explaining the saving rate in Malaysia. A number of other variables including interest rate, dependency ratio and rate of growth are also important. The dependency ratio has been found to exert a negative effect on rate of saving. The empirical results have confirmed the adverse effect of foreign direct investment (FDI) on savings, suggesting that strategies aimed at reducing the FDI (and thus debt burden) would help to raise domestic saving.

The results of two-gap analysis tends to conform with that expounded by the Neo-structuralists which claims that the dominant constraint in most developing countries is foreign exchange gap caused primarily by structural disequilibrium or macroeconomic imbalances. The estimation and projections carried out have led to be the inference that the trade constraint has tended to be more binding than the saving constraint. In the three-gap analysis, a sustainable growth of 6.5 per cent per annum would require an investment ratio of 28 per cent, while an 8 per cent of annually would growth require 35 per cent investment ratio over the period 1995-2000. With no

change in the ratio of interest payments to potential output, 5.58 per cent of foreign saving (around RM 5 billion) per year would be required for an 8 per cent growth and a 4.1 per cent (around RM 3.2 billion) annual increase would be required for a 6.5 per cent growth rate annually over the period 1995-2000.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

## **ANALISA TIGA LOMPANG EKONOMI MALAYSIA**

**Oleh**

**MARWAN A THANOON**

**Ogos 2000**

**Pengerusi: Profesor Abdul Aziz Abdul Rahman, Ph.D.**

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Malaysia, dalam persediaannya untuk mentransformasi ekonominya melalui penindustrian bagi menjadi sebuah negara serba maju menjelang tahun 2000 perlu menyediakan segala sumber yang diperlukan sebaik mungkin. Persoalan mengenai matlamat pertumbuhan adalah berkaitan dengan kewujudan lompang sumber semasa dan juga masa depan, yang mana dipengaruhi oleh faktor-faktor seperti aliran modal asing, kesan saingan modal dalaman, dan lain-lain faktor pengaruh.

Tesis ini bertujuan menghuraikan persoalan-persoalan struktur di atas, mengenalpasti penyelesaiannya serta meneliti bentuk dan tahap batasan yang dihadapi oleh ekonomi Malaysia dalam melaksanakan transformasi ekonomi. Model-model dua dan tiga lompang telah digunakan bagi mengenalpasti batasan-batasan utama yang menghadkan pertumbuhan dan menilai keperluan sumber bagi mencapai sasaran tersebut. Penekanan akan diberikan kepada penilaian impak pindahan asing terhadap



pertumbuhan potensi output. Selain daripada itu, kajian ini juga akan meneliti gelagat tabunagn ekonomi Malaysia. Ini akan dilakukan dengan menggunakn ko-integrasi multivariat diikuti dengan permodelan pembetulan kesilapan untuk menyiasat gelagat tabungan dalam rangka yang dinamik.

Penemuan-pemnemuan empirikal berasaskan analisa tabungan menunjukkan bahawa pewujudan kondisi makroekonomi yang stabil adalah kritikal bagi menggemblengkan tabungan, menggalakkan pelaburan domestik dan menyediakan asas pertumbuhan yang berdaya tahan atau mampan. Di antara angkubah-angkubah makro eksport dan tahap cukai adalah signifikan bagi menerangkan kadar tabungan di Malaysia. Beberapa angkubah lain termasuk kadar bunga, nisbah pergantungan dan kadar pertumbuhan juga adalah sama penting. Nisbah pergantungan didapati memberi kesan negatif terhadap kadar tabungan. Keputusan-keputusan empirikan mengesahkan berlakunya kesan kurang baik pelaburan langsung asing terhadap tabungan, mengesyorkan yang strategi-strategi bertujuan mengurangkannya (dan tanggungan hutang) boleh membatu meningkatkan tabungan domestik.

Keputusan-keputusan analisa dua lompong mengesahkan penemuan yang diperolehi oleh ahli-ahli strukturalis yang berpendapat bahawa batasan utama dalam negara-negara membangun adalah lompong tukaran asing yang disebabkan oleh ketidakseimbangan makroekonomi. Anggaran dan unjuran yang dijalankan telah membuktikan bahawa batasan perdagangan adalah lebih mengikat daripada batasan tabungan . Dalam analisa tiga lompong, pertumbuhan mampan pada kadar 6.5 peratus

setahun akan memerlukan nisbah pelaburan sebanyak 28 peratus, manakala pertumbuhan 8 peratus setahun akan memerlukan nisbah pelaburan sebanyak 35 peratus. Tanpa perubahan dalam nisbah pembayaran bunga kepada output potensi, sebanyak 5.58 peratus penjimatan asing (lebih kurang RM 5 bilion) setahun akan diperlukan untuk menyokong pertumbuhan 8 peratus, dan 4.1 peratus (lebih kurang RM 3.2 bilion) setahun akan diperlukan bagi menyokong pertumbuhan 6.5 peratus setahun bagi tempoh 1995-2000.

## ACKNOWLEDGEMENTS

Thanks to almighty Allah without whose blessing, this study would not have been possible.

I would like to express my sincere gratitude and indebtedness to Prof. Dr. Abdul Aziz Abdul Rahman, for his material, moral and inspiring guidance. His expert advice and fruitful discussions throughout the research work turned out to be invaluable and deserves appreciation.

I am highly indebted to Prof. Dr Ahmad Zubaidi Baharumshah for unselfishly imparting his knowledge and assistance in this research. I would also like to thank him for his helpful discussion, valuable suggestions, instruction and guidance in the experimental work and invaluable assistance in the interpretation of study.

I also wish to convey my thanks to other members of my supervision committee, Dr. Tan Hui Boon and Dr. Mariam Abdul Aziz, for their assistance throughout this study.

I wish to express my deepest and heartfelt appreciation to my wife Dr. Noha M. Yahya and my daughters Tuqa and Refqa for their love, forbearance, inspiration, moral support and assistance.

I am grateful to my brother Dr. Waleed for his constant encouragement, support and assistance during my study. Many thanks also go to brother's Hisham and Hilal and my sister Huda for their patience and sacrifice during the course of my study.

Special thanks are due to Dr Atheel Al-Jomard for encouragement, advice and co-operation.

My thanks to my dear friends Eid and Taufiq for their encouragement, help, advice and co-operation throughout the period of this study.

I would also like to express my gratitude to Iraqi government, the Ministry of higher education and scientific research and to the Turkish Study Centre, Faculty of economic, University of Mosul for giving me the opportunity to carry out full time Ph.D program. My sincere thanks also to the Malaysian government and University Putra Malaysia for their generous support and assistance.

Finally, many thanks to all that have, at one time or another make contribution, directly or indirectly to my study.

I certify that an Examination Committee met on 28 August 2000 to conduct the final examination of Marwan A. Thanoon on his Doctor of Philosophy thesis entitled "A Three Gap Analysis of Malaysian Economy" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulation 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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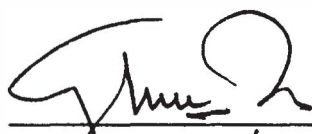
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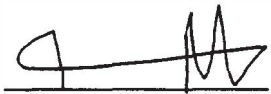
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## DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.



**Marwan A. Thanoon**

**Date:** 12 - 9 - 2000

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## LIST OF ABBREVIATIONS

Q	Potential economic activity or full capacity output
U	Capacity utilisation
g	Growth rates of potential output
i	Investment
I <sub>g</sub>	Government investment
I <sub>p</sub>	Private investment
S <sub>g</sub>	Government savings
Φ	Foreign savings
S <sub>p</sub>	Private savings
π	Public sector borrowing requirement
J*	Foreign interest payments
M <sub>r</sub>	Imports of raw materials and intermediate goods as proportion of potential output
M <sub>k</sub>	Imports of capital goods as proportion of potential output
M <sub>0</sub>	Other imports, as proportion of potential output
X	Export
Na	Net aid
μ	Government shares in foreign interest payments
μ × j*	Public interest burdens
(1 - μ)	Private interest burdens
v *	Incremental capital – output ratio
m*	Incremental output – import ratio
LSAV	Log national saving
LPAC	Log Per capita income
LGRO	Log growth rate of GNP
LEXP	Log export
LFDI	Log foreign direct investment
LDEB	Log total debt
LDEP	Log dependency ratio
NIT	Nominal interest rate
LTAX	Log tax



## **CHAPTER I**

### **OVERVIEW OF THE STUDY**

#### **Introduction**

The past three decades had seen financial issues dominating the literature on development economics. Academic attention had shifted away from strategic development issues, such as balanced sectoral growth and international trade patterns, toward issues relating to financial progress and its effects such as the impact of international debt, inflation and real exchange rates on economic growth. The work of Bacha (1992), Taylor (1996), Calvo (1996), World Bank (1997), Nurhan (1999), William (1999) fall within this realm.

In the immediate post- World War I period development economists looked at finance as being essentially an issue of state-directed mobilisation of resources in order to support an increased rate of capital accumulation. An economy's ability to grow and develop depends, among other things, on its ability or determination to marshal resources and to channel them toward activities that expand its productive capacity. The expansion of productive capacity is fundamentally determined by the country's willingness to forgo current consumption and conversely to use the savings thus generated to finance capital expenditures.

After World War II, economists showed a renewed interest in the theory of economic development. The central issue was on growth and ways to increase the endowments of productive factors available to increase the annual production of goods